

Level	Level 05					
Course Synopsis Course Code	CYU5302					
Course Title	Analytical Chemistry					
Credit value	03					
Core/Optional	Core					
Prerequisites	(CYU3200 + CYU3201 + CYU3202) Pass					
Hourly breakdown	Theory		Practical	Independent Learning	Assessment	Total
	44 hrs (22 Sessions x 2 hrs)	12 hrs (3 DS+ 1RDS x 4 hrs)	35 hrs (5 days Lab X 7 hrs)	51 hrs (Sessions [44 hrs]+ recommended readings [13 hrs])	02 hrs (2 CAT x 1 hrs)	150 hrs
Course Aim/s.	To provide theoretical knowledge and practical skills in methods of chemical analysis in order to make scientific decisions based on statistical background.					
PLOs addressed by course	<p>PLO1:Theoretical Knowledge: Explain the fundamental, principles and broader knowledge pertaining to the chosen science disciplines offered for the BSc degree.</p> <p>PLO2:Practical competence and Problem Analysis: Identify problems and apply knowledge acquired, and analyze such problems using qualitative and/or quantitative practical approaches.</p> <p>PLO4:Individual and Team Work and Leadership : Function effectively as an individual, and as a team member, sharing work and experiences, leading and managing assigned tasks adhering to ethical behavior and professional standards</p> <p>PLO5: Investigating and Problem solving: Conduct investigations on problems using scientific methodology to provide valid conclusions.</p>					
Course Learning Outcomes (CLO)	<p>The students should be able to:</p> <p>CLO1: To have the knowledge on the fundamentals of statistics in relation to chemical analyses (PLO1)</p> <p>CLO2: To have the theoretical understanding with classical methods and instrumentation methods specially spectroscopic methods (PLO1)</p> <p>CLO3: To have a sound theoretical knowledge on solvent extraction and chromatography (PLO1)</p> <p>CLO4: To acquire practical skills associated with classical methods with reference to gravimetry and titrimetry (PLO2, PLO3)</p> <p>CLO5: To obtain practical skills in spectroscopic methods and in electro analytical techniques with particular reference to potentiometry (PLO2, PLO4, PLO5)</p> <p>CLO6: To have a practical skills in methods of separation with special reference to solvent extraction and chromatography (PLO2, PLO4, PLO5)</p>					
Content (Main topics, sub topics)	Fundamental of statistics: accuracy vs. precision, standard deviation, Q test, error calculation. Classical methods of analysis: gravimetry, titrimetry (complexometric& redox titrations); separation methods: solvent extraction, chromatography & electrophoresis; instrumental methods: UV- Visible spectroscopy and photometric titrations &potentiometry.					

Teaching Learning methods	<ul style="list-style-type: none"> • Self- learning: Course material in print (18 Sessions), a MOODLE supplementary based course, Recommended readings • Non-compulsory contact sessions -3 Day schools • Continuous assessments: 2 NBT • Practical Assessment 	
Assessment strategy	Overall CA Mark (OCAM): 40%	Final Assessment Mark(FAM): 60%
	Practical Assessment Mark (P.A.M): $P.A.M. \geq 50\%$ Theory Assessment Mark (T.A.M.): $T.A.M. \geq 35\%$	Final Evaluation Theory: 100% (02 hrs)
Recommended Readings:	<ol style="list-style-type: none"> 1. Vogel I., (1989), Vogel's Textbook of Quantitative Chemical Analysis. 5th Ed 2. Christian G. D., (2007), Analytical Chemistry. 6th Ed 3. Day (Jr.) P. A. and A.L. Underwood A. L., (1991), Quantitative Analysis 4. Skoog D. A., West D. M and James Holler F., (1994), Analytical Chemistry: An Introduction. 6th Ed 5. Harris D. C., (1999), Quantitative Chemical Analysis. 5th Ed 	